

## PATENT COOPERATION TREATY

Rec'd PCTO 14 JUN 2005

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:  
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10/538984  
PCTNOTIFICATION OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing  
(day/month/year)

13 DEC 2004

Applicant's or agent's file reference

2003B133

## IMPORTANT NOTIFICATION

International application No.

PCT/US03/40903

International filing date (day/month/year)

19 December 2003 (19.12.2003)

Priority date (day/month/year)

20 December 2002 (20.12.2002)

Applicant

EXXONMOBIL CHEMICAL PATENTS INC.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

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Commissioner for Patents  
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Alexandria, Virginia 22313-1450

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Form PCT/IPEA/416 (July 1992)

Authorized officer

Roberto Rábago

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ACKNOWLEDGED  
PATENT LEGAL ASSISTANT GROUP  
J. M. JACKSON

DEC 27 2004

☐ FYI  
☐ Reminder  
☐ FileEMCLT  
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## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2003B133	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/40903	International filing date (day/month/year) 19 December 2003 (19.12.2003)	Priority date (day/month/year) 20 December 2002 (20.12.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): C08F 4/12, 4/44, 4/64 and US Cl.: 526/90, 91, 144, 157, 158, 169, 206, 237		
Applicant EXXONMOBIL CHEMICAL PATENTS INC.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>  </u> sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability.</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 16 July 2004 (16.07.2004)	Date of completion of this report 03 December 2004 (03.12.2004)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Roberto Rábago Jean Proctor Paralegal Specialist Telephone No. (571) 272-1700	

Form PCT/IPEA/409 (cover sheet)(July 1998)

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**I. Basis of the report**

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed.
- ☒ the description:  
pages 1-96 \_\_\_\_\_ as originally filed  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the claims:  
pages 97-113 \_\_\_\_\_, as originally filed  
pages NONE \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the drawings:  
pages 1-3 \_\_\_\_\_, as originally filed  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☐ the sequence listing part of the description:  
pages NONE \_\_\_\_\_, as originally filed  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>23-26,29-33,35,43-47,53</u>	YES
	Claims <u>1-22,27,28,34,36-42,48-52,54-69</u>	NO
Inventive Step (IS)	Claims <u>23-26,29-33,35,43-47,53</u>	YES
	Claims <u>1-22,27,28,34,36-42,48-52,54-69</u>	NO
Industrial Applicability (IA)	Claims <u>1-69</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

Claims 1-22,27,28,34,36-42,48-52 and 54-69 lack novelty under PCT Article 33(2) as being anticipated by US 5,728,783 (D1). The reference discloses polymerization comprising a primary transition metal catalyst in combination with a Lewis acid cocatalyst (see col. 4-8, Examples). The reference furthermore recommends hydrofluorocarbon solvent as a polymerization medium (col. 5, line 14). Although the reference does not mention specific hydrofluorocarbon solvents, those of ordinary skill in the art are fully aware of at least the simplest HFC solvents available. Accordingly, the broad scope of these claims is not novel over the teachings of D1.

Claims 23-26,29-33,35,43-47 and 53 meet the criteria set out in PCT Article 33(2)-(3); because the prior art does not teach or fairly suggest the features of these dependent claims, particularly regarding initiators, the presence of water, and diluent mass uptake

Claims 1-69 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Applicants' arguments filed 05 November 2004 have been considered, but they are not persuasive, and therefore the conclusions set forth in the Written Opinion have been repeated hereinabove. Applicants do not dispute that the reference discloses polymerization comprising catalyst, cocatalyst and hydrofluorocarbon solvents, but argue that the reference is insufficient because it does not provide a specifically suggested combination of the three elements. However, there is no requirement that a reference provide a specific example in order to teach the claimed process. The only substitution required for the examples of the reference to be expressly within the scope of the claims is the substitution of an HFC solvent for a non-HFC solvent. Given both the specific suggestion in the reference of such a substitution and the high level of skill in the polymerization art, the reference disclosure clearly provides sufficient suggestion to the skilled chemist/engineer to use a hydrofluorocarbon solvent in the method of the reference.

----- NEW CITATIONS -----